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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

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FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of)
)
The Establishment of Policies and Service Rules) IB Docket No. 99-81
for the Mobile Satellite Service in the 2 GHz Band) RM-9328

COMMENTS OF CELSAT AMERICA, INC.

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SUMMARY

Celsat America, Inc. ("Celsat") is poised to introduce a truly innovative, low cost mobile satellite service ("MSS") that has the potential to eliminate the "digital service deficit" which currently exists in the United States. Unlike current MSS licensees with prohibitively expensive service offerings and fees, Celsat has designed its service to include the millions of ordinary Americans in areas not currently served by the terrestrial wireless networks.

In order to initiate this new service at the earliest possible time, Celsat urges the Commission to conclude the licensing process for Celsat and other qualified 2 GHz MSS applicants by December 1999. If all nine applicants are to be accommodated in the 2 GHz band, the Commission should adopt the flexible band arrangement, which segments the available spectrum into core and expansion spectrum bands. Although Celsat believes the traditional band plan is inferior to the flexible band arrangement in certain respects, Celsat could support the traditional band plan (with certain modifications) as another way of licensing all qualified applicants by December 1999. Celsat urges the Commission not to adopt either the negotiated entry approach or auctions as methods for licensing qualified 2 GHz MSS applicants. The negotiated entry approach likely will lead to extensive disputes between incumbent 2 GHz MSS providers and those seeking entry to the 2 GHz band in order to initiate their service. Auctions are neither a legally permissible nor an economically prudent method for licensing 2 GHz MSS providers.

The Commission should affirm its tentative conclusion to avoid analysis of financial qualifications prior to licensing qualified 2 GHz MSS applicants. Commission

experience demonstrates that financial qualifications fail to provide an accurate proxy for a satellite applicant's ability and/or willingness to implement a satellite system. Construction milestones, however, are an excellent proxy for a satellite licensee's ability and/or willingness to implement its system and should be adopted.

The Commission should affirm its tentative conclusion that Celsat's proposal to use the Ka-band for feeder link operations complies with the Ka-band plan. Given that feeder links for an MSS system are the engineering equivalent to service links for a GSO/FSS system, the Commission's position that Celsat may use those portions of the Ka-band designated for GSO/FSS use is entirely accurate.

Finally, the Commission should give 2 GHz MSS licensees maximum flexibility in the design of their MSS systems and should adopt those service rule requirements that clearly promote the public interest, including service to rural communities and E911 capabilities.

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Celsat America, Inc. ("Celsat"), by undersigned counsel, hereby submits the following comments on the Notice of Proposed Rulemaking (the "NPRM") released by the Federal Communications Commission (the "Commission") on March 25, 1999 in the above-captioned proceeding. Celsat is one of nine applicants¹ seeking to provide mobile satellite service ("MSS") in the 2 GHz band and proposes a dual mode satellite/terrestrial MSS system.²

¹ See Satellite Applications and Letters of Intent Accepted for Filing in the 2 GHz Band, Report No. SPB-119 (1998). The other 2 GHz applicants are the Boeing Company (Boeing), Constellation Communications, Inc. (Constellation), Globalstar, L.P. (Globalstar), Iridium LLC (Iridium), Mobile Communications Holdings, Inc. (MCHI), ICO Services Limited (ICO), Inmarsat Horizons (Inmarsat) and TMI Communications, Limited Partnership (TMI). In light of recent press reports indicating that Boeing intends to buy a controlling stake in MCHI, Celsat respectfully requests that the Commission require Boeing to divulge all details concerning the nature of its investment in MCHI. See Communications Daily, May 4, 1999 at p. 11; see also Satellite Week, May 10, 1999 at p. 8.

² See Master System Application of Celsat, Inc. for a GEO Satellite-Based MSS Space/Ground Hybrid Personal Communications Service, File Nos. 26/27/28-DSS-P/LA-97, 88-SAT-AMEND-98 (April 8, 1994).

I. INTRODUCTION

The NPRM sets forth three goals which Celsat agrees are fundamental to the introduction of a new generation of innovative mobile satellite services: "promoting competition by creating opportunities for new entrants, expediting the authorization process, and providing incentives for system operators to commence service to the public promptly using state of the art technology."³ Celsat, the first of the current nine applicants for 2 GHz MSS licenses, urges the Commission to keep further delays in the licensing process to a minimum and thereby hasten the availability of high quality, affordable digital wireless service to millions of Americans both inside and outside the existing terrestrial service network.

Unlike current MSS licensees with prohibitively expensive service offerings and fees, Celsat has designed its service to bring affordable coverage to the millions of ordinary Americans in areas not currently served by terrestrial PCS service, as well as current PCS subscribers who roam into unserved areas. By making it both economically and technically feasible for PCS providers to serve the entire United States through Celsat's satellite system, Celsat's service will immediately eliminate the "digital service deficit" which currently exists in ninety percent of the U.S. Indeed, Celsat may be the only 2 GHz MSS applicant capable of providing truly affordable telephone access to Indians on Indian Reservations, a worthy goal which the Commission seeks to accomplish.⁴

³ NPRM at ¶ 1.

⁴ See generally Overcoming Obstacles to Telephone Service for Indian Reservations, BO Docket No. 99-11.

Celsat's service will appeal to millions of Americans for many reasons. First, the service will be offered at pennies per minute, rather than dollars per minute. Second, the Celsat handset will be a pocket-sized unit that will retail for under \$200. This compares very favorably with the bulky and expensive brick-sized handsets of competitors like Iridium, Globalstar and ICO, which have price tags in the thousands. Each of Celsat's satellites will provide 50,000 low-cost voice circuits over the United States – a factor of ten more than Iridium, Globalstar or ICO. In addition, Celsat will offer its customers better signal quality due to its higher reserve power and elevation angle. With the advent of Celsat's service, PCS carriers will be able to offer customers in rural and traditionally underserved areas the same high-quality, high-speed digital wireless service that urban customers now take for granted.

In the interests of expanding the availability of PCS service to the American public and in keeping with the goals set forth by the Commission for launching the 2 GHz service, Celsat urges the Commission to

- conclude the licensing process for Celsat and other qualified 2 GHz MSS applicants by December 1999;
- adopt the flexible band arrangement (if all nine applicants are to be accommodated) which segments the available spectrum into core and expansion spectrum bands;
- rely on construction milestones in lieu of financial qualifications;
- affirm its tentative conclusion that Celsat's use of Ka-band spectrum for its feeder links complies with the Ka-band plan;
- adopt policies that give 2 GHz MSS providers maximum flexibility in designing their systems; and

- adopt service rule requirements that serve the public interest (including incentives to provide service to rural communities and to provide E911 capabilities).

II. THE COMMISSION'S FIRST PRIORITY SHOULD BE CONCLUDING THE LICENSING PROCESS BY DECEMBER 1999

Celsat has waited over five years for an FCC license to launch its high-quality wireless communications service, a service that will make digital wireless networks accessible throughout the U.S. Rather than selling expensive phones and expensive minutes to a small group of elite customers, Celsat will provide affordable service to satisfy a real and existing need for high quality digital wireless service in the approximately ninety percent of the U.S. that is not covered by PCS terrestrial networks.

Celsat applauds the NPRM's focus on "expediting the authorization process" and "providing incentives for system operators to commence service to the public promptly using state of the art technology."⁵ Licensing should be expedited so that Celsat, which was truly "first in line" to offer service in Region 2 among the current nine applicants, will be licensed by December 31, 1999. Celsat's competitors in this proceeding, most of whom are not using their existing MSS licenses, may not be as anxious to assume the build-out obligations that will be triggered by licensing. Celsat, however, is eager to launch and begin to offer service to a large base of customers who are is desperate for affordable digital wireless service.

In the interest of expediting the licensing process, Celsat proposes two procedural approaches, either of which would help to ensure that licensing is complete by December 1999.

⁵ Id.

The first and preferred option would be to grant the applications in their unamended form, as the Commission did for GSO FSS systems in the Ka-band. In the Ka-band proceeding, like the present one, almost all of the pending application were inconsistent with the band plan developed by the Commission. Nevertheless, the Commission obviated the need for successful applicants to conform their satellite applications to the final band plan, orbital assignment schedule, and service rules by ordering licensees to comply with all rules adopted for licensed systems and to file a letter with the Commission stating their intention to construct a system in compliance with those rules.⁶ Dispensing with the practice of requiring applicants to amend their satellite applications while binding all licensees to full compliance with the 2 GHz band plan and service rules would greatly expedite the licensing process in this proceeding and thereby speed public access to these important services.

Applying that approach in this case, the Commission should issue licenses which clearly state the conditions upon which they are being issued and require successful applicants to submit letters in lieu of amended applications in which they agree to fully comply with directives included in their licensing orders and the service rules. Doing so will eliminate at least three months of delay – the minimum time necessary for a cycle of amendments, comments and replies.

⁶ See, e.g., Echostar Satellite Corporation Application for Authority to Construct, Launch, and Operate a Ka-Band Satellite System in the Fixed Satellite Service, 13 FCC Rcd 5665 (Int. Bur. 1997); Hughes Communications Galaxy, Inc. Application for Authority to Construct, Launch, and Operate a Ka-Band Satellite System in the Fixed Satellite Service, 13 FCC Rcd 1351 (Int. Bur. 1997); KaStar Satellite Communications Corp. Application for Authority to Construct, Launch, and Operate a Ka-Band Satellite System in the Fixed Satellite Service, 13 FCC Rcd 1366 (Int. Bur. 1997).

The second approach would be for the Commission to announce the final band plan as quickly as possible so that applicants may prepare and resubmit their satellite applications without unnecessary delay. Service rules could then be prepared and released in a separate order later this fall. This approach should only be followed, however, if the Commission determines that it must have amended applications on file before issuing licenses to the 2 GHz applicants. Bifurcating the Commission's decisions regarding the band plan and the service rules in this manner will permit the amendment cycle to be completed earlier. Celsat respectfully reiterates, however, that this approach is inferior to the approach taken in the first processing round of the Ka-band where the Commission issued the licenses prior to issuing the final band plan and service rules.

"The need for speed" really should not be underestimated at this juncture. If the Commission is truly determined to expedite the authorization process, it will limit further delay by completing the licensing process by the end of December 1999.

III. IF ALL NINE SYSTEMS ARE TO BE ACCOMMODATED, THE COMMISSION SHOULD ADOPT THE FLEXIBLE BAND ARRANGEMENT

Before turning to the processing alternatives proposed in the NPRM, Celsat strongly encourages the Commission to group the Region 2 GSO systems (namely Celsat and TMI) at the edges of the uplink and downlink bands where the MSS allocation is limited to Region 2.⁷ This idea of grouping the Region 2 GSO systems primarily in that portion of the band

⁷ Since 15 MHz of the uplink spectrum is limited to Region 2, the Commission should allocate 15 MHz of the downlink for use by these Region 2 GSO systems in order to make the uplink and downlink allocations consistent.

allocated for MSS only in Region 2 is endorsed in the NPRM, and is eminently sensible given the pointlessness of licensing or building global systems in spectrum that is unavailable over two-thirds of the globe.⁸

Celsat encourages the Commission to adopt the flexible band arrangement, which is premised on providing expansion spectrum for systems that demonstrate their appeal to a strong customer base. Celsat's second choice is the traditional band arrangement. Either of these plans would be acceptable in principle, provided that expansion spectrum (or unused spectrum in the case of the traditional band arrangement) will be fairly and expeditiously distributed to systems which deploy and demonstrate a need for additional spectrum to meet customer demand. Celsat strongly discourages the Commission from adopting either the negotiated entry or competitive bidding alternatives.

A. Flexible Band Arrangement

Although the provision for 5 MHz of spectrum for each applicant in the flexible band arrangement would provide Celsat with considerably less spectrum than it otherwise seeks, the appeal of this proposal lies in the promise of eventual access to expansion spectrum. Thus, the Commission should ensure from the outset that this spectrum will be readily accessible for deserving systems that establish their need for additional spectrum to meet area coverage and customer demand.

It is widely if not universally acknowledged that, of the nine applicants in this processing round, substantially fewer than nine will actually deploy an MSS system at 2 GHz.

⁸ NPRM at ¶ 28.

Consequently, the central policy problem facing the Commission is this: How can the Commission ensure that each applicant has an opportunity to provide service without tying up spectrum for systems that will never launch? The flexible band arrangement meets this challenge by giving each proponent the absolute minimum amount of spectrum necessary to secure financing and get into operation, while reserving the remaining spectrum only for those services that are in fact carrying customer traffic. Unlike the negotiated entry approach, the flexible band arrangement gives each proponent an absolute right to use 2.5 MHz of spectrum in each direction, without battling any entrenched incumbent who may have established squatter's rights to some portion of the band. And unlike the traditional band arrangement, the flexible band arrangement holds some spectrum back for future growth, so that proponents who *do* implement their proposals can get prompt access to expansion capacity. And unlike any other processing alternative, the flexible band arrangement allows the Commission to establish a self-executing method for assigning expansion capacity based on actual, empirical, verifiable usage statistics rather than puffed-up projections of demand.

The Commission is to be commended for the specific "boundaries" it has drawn to create the various "core" and "expansion" portions of the flexible band arrangement, which Celsat endorses with one exception.⁹ Under the flexible band arrangement, however, the initial

⁹ The only exception is that there is no reason to place Celsat's two 1.25 MHz "primary spectrum segments" in different "core" portions of the band. Whatever the plans of other operators who specified both TDMA and CDMA operations, Celsat is content to have both of the "primary spectrum segments" in the TDMA GSO portion of the band. Because each operator is assigned its own "primary spectrum segments," no other operator will be adversely affected if Celsat uses one of its 1.25 MHz segments for
(continued...)

"boundaries" are to some extent less important than the rules for assignment of expansion spectrum. To achieve the full public interest benefit of the flexible band arrangement, the expansion mechanism must be as nearly self-executing as possible. Celsat suggests that the Commission adopt an expansion mechanism with the following features:

- No expansion spectrum should be permanently assigned to any operator earlier than thirty-six months after all 2 GHz MSS systems are licensed. This will prevent operators whose space stations are licensed outside the U.S. from gaining any unfair advantage with respect to the expansion spectrum.
- Thirty-six months after all 2 GHz MSS systems are licensed, and annually thereafter, each licensee should be required to file with the Commission a report stating the number of "subscriber minutes" of traffic it billed for during the preceding year and the total bandwidth used for that purpose. If an operator does not meter or bill its voice or data traffic on a per-minute basis, it should use some commercially and technically reasonable method to calculate a per-minute equivalent. Because only U.S. spectrum rights are at stake, only radio communications to, from, or within the United States should be counted. Moreover, the number of minutes billed for radio communications to rural subscribers should be weighted in order to reflect the Commission's preference for licensees serving rural areas. All figures should be presented on an annualized basis to facilitate easy comparison.
- On a date not later than four years after licensing, the Commission should begin awarding expansion spectrum to operators who are providing commercial service and who are fully utilizing their assigned spectrum. Within each of the two system types – NGSO and GSO – one additional 1.25 MHz segment in each direction should be assigned to the operator with the highest number of subscriber minutes per megahertz during the preceding twelve months. This rewards both commercial success and spectrum efficiency, and eliminates or reduces the opportunity for carriers to "cry wolf" about the need for expansion spectrum.

(...continued)

CDMA rather than TDMA. In addition, Celsat agrees that the Commission should assign spectrum in multiples of 1.25 MHz (See NPRM at ¶ 27).

- At twelve-month intervals thereafter, the Commission should again assign one additional 1.25 MHz segment in each direction (within each system type) to the operator who is fully utilizing its spectrum and has the highest number of subscriber minutes per megahertz. This process should continue until all available expansion spectrum has been assigned.

In the NPRM, the Commission expresses concern that the flexible band arrangement may result in the assignment of spectrum to licensees who will never in fact implement a system.¹⁰ Although this is virtually certain to happen, one of the key advantages of the flexible band arrangement is that it assigns each licensee a mere 2.5 MHz in each direction, which reduces to an absolute minimum the amount of spectrum that can be wasted by any given system proposal.

In addition, the Commission can improve its proposal by providing in the service rules that any spectrum assignment forfeited for failure to meet license milestones automatically becomes part of the expansion bands.¹¹ This would relieve the Commission of the burden of formally revoking forfeited assignments, deciding the inevitable petitions for reconsideration and applications for review, and then developing a mechanism for reassigning the spectrum in yet another processing round. It would also result in the assignment of expansion spectrum only to

¹⁰ NPRM ¶ 31.

¹¹ The presence of Letter of Intent ("LOI") proponents in this processing round makes it important for the Commission to keep the distribution mechanism in mind when concluding international coordination agreements. If, for example, U.S. spectrum rights are assigned to an operator whose space stations are licensed by another jurisdiction, it is important that the coordination agreements between or among the licensing administrations provide for the possibility that spectrum will be reassigned from the operator of one administration to the operator of another administration, notwithstanding ITU priorities that would otherwise apply *vis-à-vis* the two networks.

those entities that have initiated service. Those entities that are still in the process of implementing their systems but have not initiated service will not have a need for the expansion spectrum.

One aspect of the Commission's flexible band arrangement about which Celsat has some concern is the proposal "to authorize systems to operate across their respective core spectrum band, subject to coordination with other systems that have commenced operations in that core band."¹² Celsat agrees that the Commission should permit interim use of spectrum assigned to systems that have yet to launch, preferably by special temporary authority ("STA"). This will maximize the benefit from the spectrum in the near term. In addition, interim use may reduce relocation costs. For example, certain portions of the 2 GHz uplink (e.g., those located at the transition points between BAS channels) are more desirable than others because they carry much less traffic and so present greater sharing opportunities.¹³ Interim use by STA will permit the first 2 GHz MSS licensees in the band to stick to these so-called "sweet spots" until the BAS

¹² NPRM at ¶ 32.

¹³ With respect to inter-service sharing, the Commission states in the NPRM that it has concluded that MSS and broadcast auxiliary service can not share the 2 GHz band without mutual interference. Id. at ¶ 112. Celsat respectfully requests that the Commission clarify that, notwithstanding its initial conclusion that MSS and broadcast auxiliary service could not share spectrum without unacceptable mutual interference (See Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, First Report and Order and Notice of Proposed Rulemaking, 12 FCC Rcd 7388 at ¶ 30 (1997)), it has since concluded that "it may be possible that some [2 GHz] systems may employ technologies that would allow them to coexist with BAS in the 1990-2025 MHz band." Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service, Memorandum Opinion and Order and Third Notice of Proposed Rulemaking and Order, 13 FCC Rcd 23949, ¶ 42 (1998).

transition is complete. Celsat stresses, however, that the Commission should implement interim use only on a temporary basis by STA rather than permanent authorization. This will prevent disputes over access to the spectrum whenever new entrants deploy.

In the NPRM, the Commission seeks comment on the necessity or desirability of guardbands under the flexible band arrangement.¹⁴ In Celsat's view, the Commission should not specify guardbands. Instead, the Commission should adopt reasonable limits on the spectral density from one satellite system falling anywhere in another system's allocated band. A reasonable limit would be 10dB below noise level in a 0dBI antenna at ground level, averaged over 20mS, that is -184dBm/Hz in the 0dBI antenna, which at 2 GHz is -156.5 dBm/Hz/square meter or -120.5 dBm/4KHz/square meter. The licensees would then determine how close to their allocated band edge they could operate while still meeting these limits.

B. Traditional Band Plan

Celsat's second choice is the traditional band arrangement, whereby each of the nine applicants would receive a total of 7.5 MHz of spectrum (3.75 MHz for the uplink and 3.75 MHz for the downlink). Like the flexible band arrangement, the traditional band arrangement gives each system proponent a fighting chance to implement its proposal, thus relieving the Commission of the task of picking winners and losers now. Although the 7.5 MHz available under the traditional band arrangement does not accommodate Celsat's long-term requirements, Celsat would accept this spectrum assignment because of the likelihood that not all of the nine systems will succeed in meeting milestones. If the Commission were to adopt a self-executing

¹⁴ NPRM at ¶ 38.

mechanism for redistributing forfeited spectrum, then this plan, like the flexible band arrangement, would yield expansion spectrum for systems that prove themselves by meeting milestones, providing wide area coverage and building a strong customer base.

However, the traditional band arrangement is inferior to the flexible band arrangement in at least two ways. First, it assigns each system 7.5 MHz of spectrum rather than 5 MHz. Even if one assumes, optimistically, that five of the nine applicants will eventually launch MSS systems, this difference results in an additional 12.5 MHz lying fallow due to operator default – almost one sixth of the band. Second, unlike the flexible band arrangement, the traditional band arrangement would require the Commission to reclaim potential "expansion spectrum" from defaulting licensees before reassigning it. Consequently, no "expansion" spectrum would be available until at least six or seven years after licensing, assuming the Commission adopts the milestones currently proposed.¹⁵ This limits the amount of service that successful operators can provide to the public, without any corresponding public interest benefit.

The Commission can significantly improve the traditional band arrangement alternative by announcing from the outset that any spectrum relinquished by default due to failure to meet milestones will automatically be considered expansion spectrum. The expansion spectrum could then be redistributed according to the same method outlined above for purposes of awarding expansion spectrum under the flexible band arrangement. It would be better, however, for the Commission to adopt the flexible band arrangement so that the availability of expansion

¹⁵ Id. ¶¶ 85-86.

spectrum is not delayed by the need for the Commission to reclaim the spectrum from defaulting licensees.

C. Negotiated Entry

Under this alternative, all qualified applicants would be "conditionally licensed" to provide service anywhere in the 2 GHz MSS band. Each "conditional licensee" would then be required to coordinate in good faith regarding all technical matters, including the specific frequencies to be used. This coordination might be required prior to launch and operation of any of the systems, but the Commission also suggests that it could be deferred until a second system seeks to share spectrum and coordinate service with the first system operating in the band. Unfortunately, both scenarios are rife with potentially disastrous consequences for the development of meaningful competition. The Commission's intuition that "problems could arise when up to nine separate entities attempt to negotiate and coordinate with each other" is absolutely on target.¹⁶

If negotiations among all the parties must be finalized prior to the launch and operation of any of the licensed systems, delay will be inevitable for several reasons. First, not all of the participants in such a negotiation will need a U.S. space station license to operate (*e.g.*, ICO, TMI, and Inmarsat). These systems will have no incentive to be reasonable with regard to spectrum location and technical coordination because unlike their U.S. counterparts, reaching such an agreement will impact only their ability to provide service to the United States, not their ability to launch and operate elsewhere. On the other hand, if negotiation is postponed until the

¹⁶ Id. at ¶ 41.

need arises (*i.e.* each time a new system seeks to launch and begin sharing spectrum with incumbent users), incumbent users will have nothing to gain from negotiating a diminution in their own use of spectrum in favor of the introduction of competition.

The real problem associated with a Commission decision not to delineate spectrum assignments is that delay in reaching a decision almost always favors someone, no matter how earnestly certain participants may desire reaching a speedy consensus. Simply put, negotiation only works when every party at the table has something to gain by being reasonable. Unfortunately, in this case almost every party will have some incentive to delay the process. Some of the applicants are able to construct and launch their systems and operate them outside the United States without FCC approval. Those parties will be loath to graciously welcome competition and will instead simply stonewall new entrants. Other applicants have existing licenses that are nowhere near fully used, or in some cases completely unbuilt. These parties have virtually no incentive to reach quick consensus.

One need look no further than the Big LEO and Little LEO processing rounds for evidence of the pitfalls of industry-led negotiations. Each took years to resolve¹⁷ and "suc

¹⁷ The Big LEO processing round lasted over four years. The Big LEO proceeding was initiated in late 1990 when Ellipsat Corporation, now MCHI, and Motorola Satellite Communications filed applications to construct LEO satellite systems. Motorola received its license in 1995. See Motorola Satellite Communications, Inc., 10 FCC Rcd 2268 (1995). MCHI received its license in 1997. See Mobile Communications Holdings, Inc., 12 FCC Rcd 9663 (1997). Similarly, each of the Little LEO rounds took over four years to resolve. The first Little LEO processing round began in 1990 when Orbital Communications Corporation (Orbcomm) filed an application proposing a commercial Little LEO system. The first Little LEO license was granted in October, 1994, the second on July 21, 1995, and the third on November 13, 1995. Amendment of Part 25 of the
(continued...)

ceeded" only after the Commission forced compromise¹⁸ or attrition made real compromise unnecessary.¹⁹ The Commission should spare itself and the industry the inevitable frustration, cost, and delay that would accompany the negotiated entry approach, which no doubt will lead to extensive disputes over access to spectrum that will waste the time and resources of the Commission and the 2 GHz licensees.

Finally, all applicants need to raise money to implement their systems. Typically, the uncertainty in the licensing process is so great that the financial markets require a company to

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Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service, Report and Order, 13 FCC Rcd 9111 (1997). The second Little LEO processing round was launched in September 1994 and licenses were finally issued in 1998.

¹⁸ In the Big LEO proceeding, deadlock was broken only after the Commission indicated that it was prepared to divide the spectrum by auction, lottery, or comparative hearing. Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands, 9 FCC Rcd 5936, ¶ 64 (1994).

¹⁹ Two years into the second Little LEO processing round an exasperated Commission issued an NPRM proposing to limit eligibility to new entrants because the eight applicants were not able to make progress in reaching a spectrum-sharing plan. This eminently sensible idea might have been implemented in that round had it not been rendered unnecessary due to significant attrition in the applicant pool while the applicants protested the eligibility requirements. A sharing plan was only agreed upon after three of the eight applicants abandoned their proposals. GE-Starsys returned its first round license and withdrew its second round application; GE Americom withdrew its second round application. Orbcomm's parent corporation acquired certain assets of CTA Inc., the parent of CTA, and CTA withdrew its second round application. See Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service, *supra*, note 17.

be licensed before sufficient capital can be raised to complete system design, development and launch. Of all the applicants, ICO is furthest along in raising funds, and is the only applicant not dependent on a U.S. license to complete its funding. If the Commission chooses to assign "conditional" licenses to Celsat and others as is strongly advocated by ICO, ICO will enjoy a significant advantage over other applicants because other applicants will find it significantly more difficult to raise money for their systems. All other applicants will, therefore, forfeit their "conditional" license, leaving all of the spectrum to ICO. This eventuality surely is not consistent with the goals of the Commission or the public interest.

D. Competitive Bidding

The final processing alternative proposed in the NPRM is competitive bidding, the alternative that has in the past been used to "encourage" the industry to avoid mutual exclusivity among MSS proposals. Auctions for MSS authorizations would threaten the very foundations of the international regime for space communications, without any corresponding domestic public interest benefit.

The most fundamental objection to auctions for satellite services is that the U.S. may not sell what it does not own. By international law, space is a "*res communis*" – a thing common to all which can never be exclusively acquired.²⁰ Generally speaking, no country has any

²⁰ Multilateral Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, entered into force October 10, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 ("Outer space . . . is not subject to national appropriation by claim of sovereignty, by means or use of occupation or by any other means.")

a priori claim to the use of radio frequencies from particular places in space.²¹ For this reason, satellite licensing differs fundamentally from terrestrial spectrum authorizations to which no other country has any claim whatsoever. Spectrum and orbit resources are available on a first come-first served basis for concrete system proposals that are duly notified. The system collapses if one country first claims a right to the resources and then searches for a concrete proposal to fit into that slot.

The United States has conducted auctions to assign licenses for the Direct Broadcast Satellite Service (DBS) and the Digital Audio Radio Satellite Service (DARS) but these exceptions actually prove the rule. As the Commission points out in the 2 GHz NPRM, the spectrum auctioned in the DBS and DARS proceedings "had been identified in ITU Region 2 as

²¹ Indeed, when a number of equatorial countries attempted in the 1976 "Bogota Declaration" to assert sovereignty over portions of the geostationary satellite orbit as an extension of each nation's territorial airspace, the U.S. joined the rest of the world in soundly rejecting this claim.

uniquely within the regulatory authority of the U.S."²² Thus, the United States was free to use auctions in these two proceedings because to do so would in no way interfere with the sovereignty of other nations to license this service for use in their own territory.

In contrast, the 2 GHz frequencies remain subject to the standard ITU publication, coordination, and notification process. U.S. licensees must participate in this process on the same terms as all other international system proponents; the U.S. may not arrogate to itself authority to resolve such disputes in favor of applicants that succeed in a U.S.-sponsored auction.

Furthermore, satellite auctions simply would not deliver the public interest benefits that flow from auctions in other services. The ITU has cautioned against using auctions to license global or regional satellite systems because if auctions for global or regional satellite systems were held in multiple countries, this would force potential service providers to expend significant resources to participate in each auction, lead to delays in implementing new and innovative

²² NPRM at ¶ 8, n.33. The DBS proceeding involved licensing in a "planned band": at RARC-83 the United States had been allotted 32 channels (covering spectrum from 12.2 to 12.7 GHz) at each of eight orbital locations for DBS service under the ITU Region 2 Plan for the Broadcast Satellite Service. See Revision of Rules and Policies for the Direct Broadcast Satellite Service, IB Docket No. 95-168, Notice of Proposed Rulemaking, 11 FCC Rcd. 1297, 1303 (1995). Although it did not involve a "planned band" per se, the DARS auction assigned spectrum that had been specifically allocated for BSS service only in the United States and India. See Table of Frequency Allocations, 47 C.F.R. § 2.106 n.5.393. Since the U.S. was the only Region 2 country with a BSS allocation in these frequencies, the DARS situation was essentially analogous to that of DBS.

services, and create significant uncertainty because such providers would be unsure that they would win auctions in all countries in which they wish to provide service.²³

In summary, auctions are a perfectly good way to sell a well-defined bundle of rights that the seller definitely owns. But as in so many other satellite proceedings, neither condition holds in this case.

IV. THE COMMISSION SHOULD REFRAIN FROM ADOPTING FINANCIAL QUALIFICATIONS IN FAVOR OF IMPLEMENTATION MILESTONES

The Commission's tentative conclusion to avoid analysis of financial qualifications prior to licensing is an appropriate abandonment of an old rule that is clearly out of step with the realities of today's satellite communications industry.²⁴ Celsat is concerned, however, that the Commission reserves its intention to use financial standards as a means of weeding out applicants if all proposed systems cannot be accommodated.²⁵ Instead, the Commission should conclude that the financial standards which have been applied to date in the satellite licensing process are not designed to predict success and instead simply favor large conglomerates with hefty balance sheets that may or may not be fully committed or able to implement a proposed satellite system.

The Commission's stated purpose in applying strict financial standards to satellite licensing has been to ensure that licensees will promptly initiate new service. The measure of this commitment in past practice has been the ability to produce a healthy balance sheet at the

²³ Report ITU-R SM.2012, "Economic Aspects of Spectrum Management," 1997 SM Series, at 18 (1997).

²⁴ NPRM at ¶ 24.

²⁵ Id. at ¶ 25.

application stage, preferably representing the assets of a single corporate entity. In the distant past, the Commission's assumption that only such an entity could be a realistic candidate to succeed in the satellite business may have been reasonable. Subsequent experience, however, has proven this theory to be false.

There is no dispute that the successful launch and operation of a satellite system requires a significant commitment of financial resources. Yet Commission experience shows that use of a major conglomerate's balance sheet in accordance with the traditional financial qualification standard is not an adequate measure of true commitment to proceeding with construction, launch, and operation of a satellite system. A look back at the last fifteen to twenty years of satellite licensing shows that the financial qualifications test that has been most frequently applied is a very poor predictor. It is, in fact, worse than tossing a coin.

The low predictive value of the financial standards is dramatically illustrated by the 1983, 1985, and 1988 C- and Ku-band satellite licensing processing rounds. A review of these three geostationary FSS processing rounds demonstrates that *despite their financial qualifications*, licensees in these rounds achieved a surprisingly low launch rate. According to publicly available information, only 41% of the licensed systems were ever launched. Specifically, of the 19 applicants licensed in the 1983 Round, only 11 actually launched. In the 1985 Round, of the 23 applicants licensed, only 3 launched. Finally, in the 1988 Round, only 11 of the 19 licensees launched. Thus, notwithstanding their initial showing of their "financial qualifications" to the Commission in their license applications, the successful licensees in these rounds appear to have

been no more likely to launch their systems and begin service than applicants who might have relied on outside investors and novel financing techniques.

In statistical terms, the traditional test yields an unacceptable number of "false positives" and "false negatives." Perhaps the best recent example of a "false positive" is TRW's proposed Big LEO system. In its order granting TRW a license in January 1995, the Commission found that "TRW has submitted substantial evidence to show that it has current assets and operating income sufficient to construct and launch its system, and provided an unequivocal statement that it intends to spend the funds necessary to construct the proposed system."²⁶ The failure of TRW to implement its licensed Big LEO system illustrates the false premise upon which the financial standards are based. Having a conglomerate's healthy balance sheet does not demonstrate actual commitment of those resources to the launch and operation of a satellite system.

The TRW example stands in sharp contrast to that of EchoStar, which was licensed under the milestone approach embodied in the DBS rules. The most commonly applied financial standard would have yielded a "false negative" for EchoStar. Although it did not begin the licensing process with a robust balance sheet, EchoStar's success flows from execution of a savvy business plan which attracted the support of private investors. Applicants like EchoStar must commit significant attention early on in the process to demonstrating their competence – technically, financially, and otherwise – to cautious investors. Rather than relying on a balance

²⁶ Application of TRW Inc. for Authority to Construct, Launch and Operate a Low Earth Orbit Satellite System in the 1610-1626.5 MHz/2483.5-2500 MHz Band, 10 FCC Rcd 2263, ¶ 6 (1995).

sheet to glide through the licensing process, they must go one step further and actually demonstrate their commitment to the project to skeptical private investors. The type of skill and determination that are necessary to convince both the Commission and private investors of the viability of a proposed system serves as a useful proxy for the amount of skill and determination that will be necessary to implement a proposed system and deliver on promises of commercial success to investors and service in the public interest to the Commission. Furthermore, the process of having the business plan scrubbed by financial analysts probing for weak spots ultimately leads to a much clearer appreciation of market realities. That process helps to prevent costly flops, which are in some sense as big a waste of spectrum as are unimplemented services.

In conclusion, Celsat believes that the Commission is moving in the right direction by avoiding use of financial standards to winnow the field in the 2 GHz band plan.

Acknowledging the limitations of the traditional financial standard is a major step forward in improving the licensing process in favor of innovative service and vigorous competition.

Although financial backing will never cease to be a critical part of meaningful participation in the satellite industry, the Commission should move to a default rule where strict compliance with milestone requirements supplants a guessing game about true commitment of resources prior to licensing.

V. THE COMMISSION SHOULD AFFIRM ITS TENTATIVE CONCLUSION THAT CELSAT'S APPLICATION FOR FEEDER LINK SPECTRUM COMPLIES WITH THE KA-BAND PLAN

The Commission tentatively concluded in the NPRM that Celsat's request for feeder link spectrum in the Ka-band complies with the Ka-band plan.²⁷ Specifically, the Commission tentatively concluded that the GSO FSS designations in the Ka-band are appropriate bands to accommodate Celsat's request for feeder link spectrum. In this regard, the Commission apparently agrees with Celsat's position, articulated in the Ka-band Amendment, that Celsat can use spectrum for feeder links in the GSO FSS portions of its Ka-band because feeder links for a GSO MSS system are the engineering equivalent of service links in a GSO FSS system.²⁸ Celsat urges the Commission to affirm its tentative conclusion and permit Celsat to continue to pursue its Ka-band application.

In the NPRM, the Commission seeks comment on whether its policy of prohibiting feeder link use of the conventional C- and Ku-band FSS allocations within the domestic arc should also apply to Ka-band GSO feeder link requests.²⁹ As the Commission notes, however, the Ka-band differs significantly from the C- and Ku-bands in that it is not currently heavily used by

²⁷ NPRM at ¶ 64. In response to the cut-off date of December 22, 1997 established by the Commission for additional applications in the Ka-band, Celsat filed an amendment to its 2 GHz application requesting 850 MHz of feeder uplink spectrum and 850 MHz of feeder downlink spectrum anywhere in the Ka-band. See Satellite Applications Accepted for Filing in the Ka-band, 13 FCC Rcd 315 (1998). See also File No. 88-SAT-AMEND-98 ("Ka-band Amendment").

²⁸ Ka-band Amendment at p. 2. In fact, MSS feeder links are by definition a type of FSS. See 47 C.F.R. § 2.1 (definition of "Fixed-Satellite Service").

²⁹ NPRM at ¶ 64.

domestic fixed satellites.³⁰ Moreover, Celsat may be able to use certain portions of the Ka band where GSO FSS is allocated on a secondary basis and where no geostationary orbital slots are currently occupied by first-round Ka-band licensees (e.g., the LMDS portion of the Ka band uplink). Celsat will put its domestic orbital location to very good use because its system will introduce truly universal coverage throughout the United States, connecting many rural areas for the first time ever and making roaming inexpensive and worry-free for users who already have terrestrial mobile service. Indeed, each of Celsat's satellites will provide 50,000 low-cost voice circuits at pennies per minute. Accordingly, the concerns that caused the Commission to prohibit feeder link use of the conventional C- and Ku-band FSS allocations within the domestic are not present with Celsat's proposal.

With respect to international coordination issues, the Commission also seeks comment on whether designations of spectrum for letter of intent systems should be conditioned on successful international coordination.³¹ Letter of intent systems, like U.S. applicants, must coordinate their systems internationally. Given that the U.S. cannot be responsible for the international coordination of these systems under ITU regulations, the licensing administration must be responsible for such coordination, and Commission authorizations to use 2 GHz frequencies in the U.S. for MSS should so specify.

³⁰ Id.

³¹ Id. at ¶ 110.

VI. THE COMMISSION'S PROPOSAL TO GRANT TO 2 GHZ MSS PROVIDERS MAXIMUM FLEXIBILITY TO DESIGN THEIR SYSTEMS WILL PROMOTE INNOVATION AND SERVE THE PUBLIC INTEREST

Celsat supports the Commission's proposal to afford 2 GHz service providers the ability to use a diverse array of technologies and system designs.³² As noted by the Commission, allowing satellite operators maximum flexibility to design their systems promotes "innovative system design and create[s] additional public interest benefits by allowing operators to tailor their systems to best meet the needs of consumers."³³ In this regard, Celsat supports the Commission's proposal to license both NGSO and GSO MSS systems at 2 GHz.³⁴ If the Commission authorizes each of the nine applicants to use a unique segment of the 2 GHz band (as currently proposed), licensing both NGSO and GSO 2 GHz MSS systems will not increase the likelihood of mutual exclusivity and will provide consumers with a wider array of service offerings. Celsat also supports the Commission's proposal that GSO systems need not provide global coverage and that such systems should be required to provide coverage to all 50 states, Puerto Rico, and the U.S. Virgin Islands (unless the system demonstrates that such coverage is technically infeasible).³⁵

³² Id. at ¶ 16.

³³ Id.

³⁴ Id. at ¶ 17.

³⁵ Id. at ¶ 19. The Commission should specify that applicants, at their option, can freely amend their applications to comply with these coverage requirements in lieu of demonstrating that the coverage is technically infeasible. This policy will provide an incentive for applicants to maximize the coverage area, thereby furthering the public interest.

Given the numerous benefits consumers can enjoy from a low cost, regional MSS system such as Celsat's, the Commission's proposal for coverage requirements will serve the public interest by increasing service offerings and will not increase the likelihood of mutual exclusivity among the nine 2 GHz MSS applicants.

The Commission also seeks comment on the feasibility of permitting Aeronautical Mobile-Satellite Route Service (AMS(R)S) in the 2 GHz MSS bands as proposed by Boeing.³⁶ As noted by Celsat (and others) in comments on Boeing's application, the Commission should not permit Boeing to use spectrum at 2 GHz for the provision of AMS(R)S because such use is inconsistent with one of the primary reasons the Commission allocated spectrum at 2 GHz for MSS: "To provide the public, especially rural Americans, access to new and competitive technologies."³⁷ Moreover, as noted by the Commission, the Commission's rules have specific requirements regarding aviation distress and safety communications and these rules do not provide for AMS(R)S service in the 2 GHz band. Finally, Boeing's requirement for intra-network priority and preemptive access is inconsistent with the Commission's proposal that NGSO

³⁶ Id. at ¶ 20.

³⁷ Comments of Celsat America, Inc. filed May 4, 1998 (citing Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, 12 FCC Rcd 7388, ¶ 4 (1997)). See also id. at ¶ 13 ("We believe that MSS would also provide another option for mobile communications, and would provide communications to underserved areas, such as rural and remote areas where PCS, cellular, and other mobile services are less feasible").

systems provide continuous coverage to the entire United States.³⁸ Accordingly, the Commission should not permit AMS(R)S in the 2 GHz band.

VII. THE COMMISSION SHOULD ADOPT THOSE SERVICE RULE REQUIREMENTS THAT CLEARLY PROMOTE THE PUBLIC INTEREST, NAMELY, SERVICE TO RURAL COMMUNITIES AND E911 CAPABILITIES

In the NPRM, the Commission reiterates its commitment to "encouraging delivery of telecommunications services, including satellite services, to unserved and high-cost communities seeking to develop cost-effective incentives for such services."³⁹ As the Commission notes, "[s]atellites are an excellent technology for delivering both basic and advanced telecommunications services to unserved, rural, insular or economically isolated areas."⁴⁰ Celsat has made clear in the record in this proceeding that it is uniquely able to bring low cost advanced satellite-delivered communications services to otherwise unserved areas. Celsat's business plan envisions providing service to all Americans for 8 cents per minute, including long distance.⁴¹ No other 2 GHz applicant has made such a claim, nor could it. Celsat's system has much higher capacity and is far simpler and much less costly to implement than any of the other 2 GHz systems currently proposed in this proceeding and, thus, enjoys a tremendous cost savings over those competing systems, a cost savings it will pass on to its customers. Given

³⁸ NPRM at ¶ 18.

³⁹ Id. at ¶ 95.

⁴⁰ Id.

⁴¹ See Consolidate Replies and Oppositions of Celsat America, Inc., filed June 3, 1998, at p. 2, concerning the 2 GHz MSS applications accepted for filing in this proceeding.

Celsat's unique ability to provide low cost service to rural and other unserved communities, Celsat urges the Commission to adopt the proposal in the NPRM to grant 2 GHz applicants successfully serving rural and previously unserved communities preferential access to expansion spectrum as it becomes available.⁴²

In the NPRM, the Commission seeks comment on whether 2 GHz MSS licensees should be required to implement their systems with enhanced 911 capabilities.⁴³ In this regard, the Commission notes that in the E911 Report and Order on enhanced E911 capability, the Commission refrained from imposing any obligation on MSS to provide enhanced 911 services because MSS was still in the early development stages at that time.⁴⁴ The NPRM also notes, however, that the Commission expected mobile satellite operators to incorporate enhanced 911 features in future systems. Accordingly, the Commission distinguishes in the NPRM between 2 GHz MSS systems that are at an early stage of development and those that are essentially second generation or expansion systems, such as the Big LEOs, and asks whether the second generation systems should be required to incorporate enhanced 911 services.⁴⁵ The Commission also

⁴² NPRM at ¶ 95. See also discussion supra at pp. 9-10.

⁴³ NPRM at ¶ 94. Enhanced 911 capabilities include, among other things, position determination within an accuracy of 125 meters using a root mean square calculation. See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 18676 (1996) ("E911 Report and Order").

⁴⁴ E911 Report and Order at ¶ 83.

⁴⁵ NPRM at ¶ 94.

inquires in the NPRM as to whether those 2 GHz systems that are designed to complement terrestrial wireless communications networks -- which are required to provide enhanced 911 features -- should be required to provide enhanced 911 capabilities. Given the public interest benefits of enhanced 911 capabilities, Celsat would willingly accept a Commission requirement that all 2 GHz MSS applicants provide such services regardless of their stage of development or whether they are designed to complement terrestrial systems.⁴⁶ Such a requirement at this stage of the 2 GHz MSS proceeding is fully consistent with the technological capabilities of MSS systems and will ensure that these systems -- many of which may not initiate service for many years -- will be designed from the outset to provide these valuable services.

⁴⁶ In the interest of clarity, however, Celsat urges the Commission to confirm that applicants can amend their applications to conform to this and other service rule requirements without such an amendment being deemed "major" by the Commission. In the NPRM, the Commission suggests -- but does not state -- that it intends to follow this approach. See NPRM at ¶ 5.

VIII. CONCLUSION

For the foregoing reasons, Celsat urges the Commission to adopt the flexible band plan and to take all steps necessary to conclude the 2 GHz licensing process by December 1999.

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CERTIFICATE OF SERVICE

I, Tanisha Cobb, hereby certify that on this 24th day of June, 1999, copies of the foregoing "Comments of Celsat America, Inc." were served by U.S. Mail or by hand delivery (*) on the following parties:

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